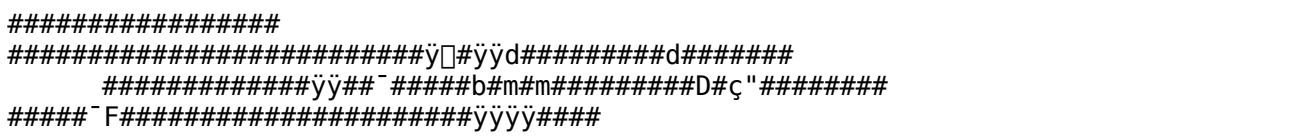

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This slide is included to emphasize that naval aviation has been getting safer over the years due, in part, to several safety-minded innovations and programs.Briefly cover the highlights emphasizing that this is a slide depicting the Class A Mishap Rate (Mishaps/100,000 flight hours). Recall that Class A Mishaps are those where at least 1 million dollars in damage has occurred, or loss of life, or loss of aircraft.#

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Since you, the briefer, are an aeromedical officer, it only seems fitting to present the same graph shown previously pointing out those psychological/human factors, medical, and physiological accomplishments that may also account for the observed improvements in the overall Class A Mishap rate.#

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###ÿÿ#####ÿ□#ÿÿd#########d#########ø###Shappell and Wiegmann, 1996This is a figure out of our 1996 publication in Aviation, Space, and Environmental Medicine entitled □U.S. Naval Aviation Mishaps, 1977-92: Differences Between Single- and Dual-Piloted Aircraft.□The figure depicts the annual frequency of Class A, B, and C mishaps attributable, at least in part, to human error (open symbols) and those solely attributed to mechanical or environmental error (closed symbols). In addition these have been plotted separately for mishap rate (circles) and mishap frequency (triangles).The important points: - Several mishaps attributed to human error in this figure are preceeded by mechanical failure; however, in the opinion of the mishap board, the mishap might not have occurred or been as severe if the aircrew had not made an error. - While the number of mishaps attributed to human error and catestrophic failure were nearly equal in 1977 a marked difference appeared over the next 16 years. By 1992, those mishaps attributed to catestrophic failure have been nearly eliminated while those attributed, at least in part, to aircrew error have leveled off to about 150 Class A, B, and C mishaps/year. - This should drive home the point that human factors are the last bastion of aviation safety.

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Background: Aircrew error continues to be a leading cause of mishaps within the Naval Air Force. Unfortunately, in many instances, mishap causal factors were previously known to supervisors and peers, but remained unknown to the CO.The insidious nature of human factors requires that they be reviewed on a regular basis.

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formal mechanism of human factors feedback to the CO. To provide the CO with the
information necessary to make decisions regarding the mishap potential of
personnel.i
```

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□###ø^ûÒ#?#ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#2#######ù###Human Factors: Human
Factors may be psychological, physiological, social, and/or professional.
Examples include:  medical conditions, emotional stressors, interpersonal
relations, performance trends, training currency, and motivation among others.u
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###ÿÿ#####ÿ□#ÿÿd#########d#########ò###Human Factors is a nebulous and often confused topic. It is important to point out that like opinions, every one has their own interpretation. This definition is presented to focus the audience in a standard fashion regarding human factors.

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Human Factors Councils and Human Factors Boards are viewed as a two-pronged approach to ASSIST the aviator and quickly return him as an integral player in the squadron. Emphasize that these are not administrative or punitive reviews. They are SAFETY reviews and should be viewed as an instrument to identify significant stressors or problems that are preventing the aviator from becoming the best he/she can be.i

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##.÷fü#    -#ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#2#######Ì###Goals of HFCs and HFBs:
Identify potentially hazardous human factors before they become causal factors
in a mishap. Assist aviators in the recognition and successful elimination of
these safety hazards.
```

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###÷ªú#    ##ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#2#######+###HFC: Forum and
Composition Informal review of all assigned aircrew. Composed of, at a minimum,
the Flight Surgeon, Safety Officer, and other officers of the COs choosing. No
formal report required by TYCOM. The HFC is strictly confidential and shall not
be used in any disciplinary proceedings.s
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###ÿÿ#####ÿ□#ÿÿd#########d#########'###Each of these bullets are vital to the conduct of the HFC. Make sure you emphasize the informal nature, composition, confidentiality and nonpunitive nature of HFCs.NO Formal report is required. Typically, the CO is briefed by the Safety Officer regarding what the council found, if anything.#

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□###÷^û#   □#ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#2#######è###HFB: Forum and Composition Convened for cause by direction of the CO. Composed of, at a minimum, the unit Flight Surgeon, Safety Officer, and other officers of the CO□s choosing. Counseling and medical evaluation may be required.

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The HFB is viewed as the next level of intervention/assistance for the aviator. In many instances aircrew have particular issues that require a focused human factors review to remedy. Again, these are opportunities to assist, not condemn and punish. These are NOT □bad-boy□ boards. Although they do require a formal report, there is not requirement to record these beyond the CO and the findings are considered priveleged and confidential.Be careful when recommending counseling -- The Boxer Law prevents individuals from psychiatric counseling and assessment against their will. Counseling here refers to counseling within the squadron. The medical evaluation should be conducted by the squadron flight surgeon and should include a full human factors work-up in addition to the standard flight physical.

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##^÷>úJ |#ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#2#######'###HFB: Forum and Composition (cont.) Unlike the HFC, the HFB may be used for further administrative procedures such as a FNAEB/FNFOEB. Formal report required. If the HFB is used in an administrative proceeding against the member, a copy of the HFB report shall be forwarded to that individual.#

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a#ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#2#######+###HFC and HFB Responsibilities:Review
may include, but is not limited to: Incidents of poor air discipline Maintenance
of flight currency, proficiency, or training  Inappropriate personal or
professional behavior Adverse medical conditions Personal and professional
issues causing unusual stressl
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Action: For COs Establish HFCs and HFBs consistent with the instruction. May expand the instruction congruent with local command structure. For Flight Surgeon Conduct annual training specific to HFCs and HFBs, emphasizing each individuals responsibility to communicate to the HFC and HFB any known unsafe aircrew tendencies. For Aviation Safety Officers Ensure that HFCs and HFBs are conducted IAW the governing instruction and appropriately documented.#

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The next series of slides identifies some of the issues important to human factors and gives the council and board a foundation from which to conduct their analyses.ø

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#□###Degraded PerformanceLoss of Aircraft ControlInability to Complete Mission
Breakdown in DisciplinePoor HeadworkLoss of Situational Awareness#
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###ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########□###Know Your LimitsStay Ahead of the
AircraftMinimize DistractionsPre-Plan and PrioritizeNever Assume AnythingAircrew
Coordination Trainingi

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#######d#########9#0ý##°ûfü□#Á#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########¿###Remain
Alert and VigilantAvoid Boredom/ComplacencyDon□t Take Unnecessary Risks Do Not
Fixate - Maintain ScanMaintain ProficiencyFollow NATOPS ThoroughlyBe Open to
Constructive Criticismr

#################(##########################ÿ□#ÿÿd#########d#########9#@ü###üvûÓ
#ë#ÿÿ####ÿÿ#####ÿØ#ÿÿd#########d#########¼### Task Fixation Perceptual Distortion Decreased Attention Span Increased Risk Taking Complacency Confusion Slowed Reaction Time Communication Problems Disintegration of Performance

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-#ÿÿ####ÿÿ#####ÿ#ÿÿd#########d#########E### If You are Ill or Fatigued,
Seek Medical   Attention DO NOT FLY#

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#□#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########&### Conduct Training Monitor Crew
Health
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#######d#########9#¬ü##4üâû°#üýÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########;### Ensure
that the Flight Surgeon       Monitors Crew Healthw
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#/#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########W### Offer Buddy Support Don□t Deny or
Hide Problems Seek Help Without Delay DO NOT FLY!#
```

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ëÿÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########□### Conduct Periodic Human Factors Review Provide Training to Heighten Aircrew Awareness Remove Individual from Flight Schedules

###F######R#######^#######f#######□#######*###Human Factors Council/Human
Factors Board###########Flight Surgeon Annual Brief#########Scott A. Shappell,
Ph.D.##Commanding
Officer############1###@### &t##Å»#@###@=#¼o*¼#@###
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